



(Clean copy of amended application) **PLANT PATENT**

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**APPLICATION FOR UNITED STATES PLANT PATENT**

**for**

**CHRYSANTHEMUM PLANT NAMED 'TUTAN TIME'**

**by**

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## LATIN NAME OF THE GENUS AND SPECIES

Botanical classification: *Dendranthema grandiflora*.

## VARIETY DENOMINATION

The new Chrysanthemum variety denomination is 'Tutan Time.'

## BACKGROUND OF THE INVENTION

The present invention comprises a new and distinct cultivar of Chrysanthemum botanically known as *Dendranthema grandiflora*, and referred to by the cultivar name 'Tutan Time'.

'Tutan Time', identified as 20778-0 originated from a cross made by Mark Boeder, in a controlled breeding program in Chichester, West Sussex, United Kingdom. The female parent of the new variety is known as 'Midas Time,' and the male parent is the variety known as 'Swing Time.' The new variety 'Tutan Time' has been asexually reproduced by vegetative cuttings at Chichester, West Sussex, United Kingdom and the distinguishing characteristics are retained through successive generations of asexual reproduction.

## BRIEF SUMMARY OF THE INVENTION

'Tutan Time' is a pot type of Chrysanthemum plant variety having an unusual flower form, giving a flat capitulum and golden bronze single type flowers.

## Comparison with Parent

Plants of the new Chrysanthemum variety 'Tutan Time' are similar to the parent cultivar 'Midas Time' in plant habitat and growth rate. In side-by-side comparisons in Chichester, West Sussex, United Kingdom, under commercial practice, plants of the new Chrysanthemum variety 'Tutan Time' differed from plants of the parent cultivar 'Midas Time' in the following characteristics.

1. The new variety 'Tutan Time' produces gold bronze single flowers whereas the parent cultivar 'Midas Time' produces gold single flowers with spoon shaped petals and green disc.

2. Plants of the new variety 'Tutan Time' have smaller and more inflorescence than plants of the parent cultivar 'Midas Time.'
3. On average the new variety 'Tutan Time' has a two day faster response time compared to 'Midas Time.'

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#### Comparison with Other Varieties

Plants of the new Chrysanthemum variety 'Tutan Time' are similar to the cultivar 'Canton' (U.S. Plant Patent No. 10,224) in plant habitat and growth rate. However, in side-by-side comparisons in Chichester, West Sussex, United Kingdom, under commercial practice, plants of the new Chrysanthemum variety 'Tutan Time' differed from plants of the cultivar 'Canton' in the following characteristics.

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1. The new variety 'Tutan Time' produces gold bronze flowers, whereas the cultivar 'Canton' produces lavender white flowers.
2. Plants of the new variety 'Tutan Time' have smaller and shorter inflorescence than plants of the cultivar 'Canton.'
3. The new variety 'Tutan Time' is more rounded in shape, with more even branching compared to the variety 'Canton.'

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#### BRIEF DESCRIPTION OF ILLUSTRATIONS

Typical specimens of the plant and flowers for the new Chrysanthemum variety 'Tutan Time' are shown in the accompanying photograph. The colours shown are as true as possible within the usual limits of this kind of illustration. Figure 1 is a whole plant view of the new variety 'Tutan Time' grown in a pot. The plant shown in the illustration is 56 days from start of Short Days.

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#### DETAILED BOTANICAL DESCRIPTION

The following description of the new Chrysanthemum variety 'Tutan Time' is of plants grown in a greenhouse in Chichester, West Sussex, United Kingdom in the month of August. The cultivar has not been observed under all possible environmental conditions. The phenotype may vary significantly with variations in the environment such

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as temperature, length of day and light intensity, without any variance in genotype. The commercial classification of the new variety is a pot Chrysanthemum.

Plants of the new variety have been grown successfully under temperature  
5 conditions averaging about 18°C at night and about 24°C to 25°C during the day under  
light conditions of about 5,000 to 6,000 foot candles. The plants respond well to the use  
of growth retardant, such as two B9 treatments at about 2000 ppm. To produce a  
commercial product the plants may be pinched once with the centre bud removed. The  
typical container size for commercial growth is 14cm. It has been observed that the shelf  
10 life of the new variety is about 24 days with a response time of about 7½ weeks. The  
new variety is suitable for growth in a temperature range of 16°C to 25°C.

The new variety may be produced as a spray or disbud. The following description  
is with respect to a plant produced as Spray pot Chrysanthemums. In the description of  
15 this new Chrysanthemum variety, colour values have been taken from the Royal  
Horticultural Society Colour Chart (R.H.S.C.C.).

#### Plant

Plant type: Pot  
20 Habit: Upright and branching  
Height: Medium 18 to 21cm  
Width: Near 25cm  
Branching characteristics: Upright and spreading  
Length of Lateral Branches: 10 to 15cm  
25 Number of Breaks from Pinch: 5 to 7  
Stem Colour: 137 C  
Response Time: 51 days  
Vigour: Medium  
Shelf Life: Near 22 days

Disease (susceptibility or resistance): None observed

Pest (susceptibility or resistance): None observed

Drought or temperature resistance: None observed

Growth retardant type and treatment: B9 85% 2 applications of 2gram/litre at 2 days,

5 21 days after propagating unrooted vegetative cuttings.

The plants were grown for two weeks in Long Day conditions (20 hours of light) and then transferred to Short Day conditions (13 hours of dark).

10 Propagation:

*Type:* Vegetative propagation via stem cuttings

*Time to rooting:* 12 – 14 days with soil temperatures of 18°C

*Rooting habit:* Fine and fibrous

Foliage

15 Number of Leaves per Lateral Branch: 7 to 11

Compound or single: Single

Arrangement of Leaves: Alternate

Shape of Leaf: Typically 5 lobed, oblong ovate

Size of Leaf: *Width* (cm): Near 4 to 5cm *Length* (cm): 10cm

20 Leaf Apex: Acute

Base: Obtuse

Attachment: Petioled

Aspect: Slightly undulating

Margin: Palmately lobed

25 Surface characteristics: *Top:* Pubescent

*Bottom:* Pubescent

Petiole: *Colour:* Near 138 B

*Length:* Near 2cm

Venation: Net, prominent midvein under side.

*Colour: upper side:* Near 138 B

*under side:* Near 138 C

5      *Colour:*      Mature Leaf, *upper side:* Near 138 A; *under side:* Near 138 B

                    Young Leaf, *upper side:* Near 138 A; *under side:* Near 138 B

#### Flower

Flower Appearance: Single Flower with quilled petals

Flower type: Single (Daisy)

10      Flower Form: Slightly cupped

Flower shape: Circular

Flower Habit: Upright

Number of blossoms per branch: 5 to 8

Inflorescence form: Cyme

15              Depth of fully expanded blossoms: Near 1½cm

                    Diameter of fully expanded blossoms: Near 7cm

#### Phyllaries:

*Number:* 18 to 23

20              *Colour:* Near 137 A

*Length:* Near 1.2cm

*Width:* Near 0.3cm

*Texture/Appearance:* Pubescent

25      Peduncles: Peduncle length is shortest at the terminal flower and progressively longer moving down the stem; longest length is on average 10cm; shortest length on average 5cm.

*Length:* 6cm

30              *Colour:* Near 137 B

*Surface:* Slightly pubescent

*Habit:* Slightly curving

*Strength:* Medium/Strong

Pedicel:

- 5            *Length:* Terminal: Near 5cm;    Lateral: Near 7cm  
              *Colour:* Near 137 B  
              *Surface:* Pubescent  
              *Habit:* Slightly curving  
              *Strength:* Medium/Strong

Ray florets:

- 10           *Form/Shape:* Straight, slightly spatulate  
              *Texture/Appearance:* Matte  
              *Number per flower:* 30 to 45  
              *Length:* 1 to 2cm; *Width:* 0.2 to 0.4cm  
15           *Apex:* Rounded and Dentate  
              *Base:* Tapered  
              *Margin:* Entire

Disc florets:

- 20           *Form/Shape:* Cylindrical  
              *Texture/Appearance:* Shiny  
              *Number per flower:* 25 to 30  
              *Length:* Near 0.5 to 0.7cm; *Width:* 0.05 to 0.1 cm  
              *Diameter of disc:* Near 1.2cm

Fragrance: Slight

Flower Bud (at onset of colour):

- 25           *Length:* Near 0.7cm  
              *Diameter:* Near 1.0cm  
              *Form/shape:* Globular

General flower colour: Golden bronze

- 30           1.       Ray florets, *upper side:*  
                      *Immature:* Near 25 A  
                      *Mature:* Near 23 A  
                      *Older/Fading:* Near 15 B  
  
35           2.       Ray florets, *under side:*  
                      *Immature:* Near 25 B  
                      *Mature:* Near 23 A

*Older/Fading:* Near 15 B

3. Disc florets:

*Immature:* Near 8C

*Mature:* Near 138 D

*Older/Fading:* Near 8 C

4. Bud: Near 137 B

Flower progression: Slight colour fading and flattening of flowers, with age

Reproductive Organs

10 Gynoecium present on Ray and Disc florets.

*Pistil number on Ray florets:* 35 to 40

*Pistil number on Disc florets:* < 802

*Stigma color:* Near 6C

*Stigma shape:* Forked

15 *Style color:* Near 6C

*Style length on Ray florets:* Near 0.5cm

*Style length on Disc florets:* Near 0.5cm

Androecium present on Disc florets only.

20 *Stamen number:* 150

*Anther shape::* Cylindrical

*Anther color:* Near 9A

*Pollen color:* Bright Yellow. Near 12A

*Pollen Quantity:* Little

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Fruit and Seeds: None observed

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